with a large number of experts on the "Inquiry," the organization that prepared research material for the American Commission to Negotiate Peace, and they have had the further advantage of knowing men and events on the ground. They served on various territorial commissions of the Peace Conference and speak with authority and not as the scribes. Their statements of fact were tested by the fire of actual experience. The refinement of statistical expression was a constant and necessary process in all the boundary settlements.

There is, however, no pretense to make the book a geographical treatise. The avowed object is a discussion of a single theme—the territorial settlements. The specific value of the book, from the standpoint of scholarship alone, lies in its vivid and authoritative treatment of the historical setting of each problem. The people of central and western Europe are accustomed to thinking historically. Some of the strongest motives of today have their sources from deep within what might be called the historical structure as well as the relations of a people. The motivations of the western democracies are of a wholly different type. The geographer who would really understand a people or a new nation now appearing on the map cannot have a balanced or scientific understanding of his problem if he deals only with the physical setting. So much has been written on the new boundaries established by the peace treaties by way of destructive criticism that a cool and scholarly analysis is most timely and useful.

The captious critic would find most of this book thorny reading. If the new boundary in the Banat of Temesvar cuts across a score or more of drainage lines and roads, if the new boundary of Hungary requires half a hundred custom houses, turntables and stations, it is indeed a calamity. But what is the other horn of the dilemma? It is easy to picture economic injustice when new boundaries have to be laid down. Has anyone drawn better proposals on a map? The world could not have survived the blow to it had the old boundaries been followed. The present chaos is deplorable; the chaos resulting from a denial of the national aspirations of Czechs, Serbs, and Poles would have been fatal. If these states had to be established they had also to be given vitality. It will be one of the most interesting and valuable of the future tasks of the geographer and the economist to see what adaptations of frontiers, or of physical or political circumstances will be evolved as a result of the fragmentation of Central Europe and the inevitable resulting disturbances to the economy of the inhabitants. We had thought of Europe as an adjusted region where life had become well fitted to environment; we see it now, in an instant, set to pioneering again—not in the old sense, but in a political and social sense, with only the old geographical and historical foundations on which to build.

The book covers but a part of the European settlements and does not touch the other continents. For example, the Baltic states are not treated, nor is there a statement of the Turkish or Pacific or Far Eastern problems. This is due to the limitations of the lecture form in which the several chapters were prepared and the brevity of the course (Lowell Lectures). The maps leave much to be desired. An invaluable feature is the well-selected list of references partly to original and partly to secondary sources of material.

The Irrigation Problem in the Nile Basin

William Willcocks. **The Nile Projects.** xii and 184 pp.; maps, diagrs., index. [Cairo], 1919. 10 x 6½ inches.

Murdock MacDonald. **Nile Control Works.** 16 pp.; map. Ministry of Public Works, Cairo, 1919.

One of the claims of Egyptian nationalists is that Egypt is taxed for the benefit of the Anglo-Egyptian Sudan and that in the material development of the Sudan insufficient account is taken of the water problems of the lower Nile valley. These political differences between the Egyptian leaders and the British administration find a basis in a difference of opinion on the part of the engineers upon the best method of regulating the irrigation waters of the Nile. The two papers here dealt with present opposite views. Despite their controversial character the papers are of great value to the geographical student in their presentation of a clear picture of the present irrigation situation in Egypt.

The battle of Omdurman marks the beginning of the recent period in which British engineers have sought to extend the cotton lands of the Nile valley by a more conservative use of Nile waters. The two great enemies of the country are drought and inundation. Sir William divides the Egyptian year into three seasons: summer, flood, and winter. The first extends from the beginning of April to the end of July, when the Nile is at its lowest. The second extends from the beginning of August to the end of November, when the Nile overflows its banks. The third includes the months of December, January, February, and March, when the Nile is confined within its channel but carries a supply in excess of agricultural requirements.

Associated with each of these three seasons there are three groups of crops. The summer crops are cotton, sugar cane, millets, rice, vegetables, and fruit. The flood crop is maize

or millets and flood rice over restricted areas. The winter crops are wheat, beans, barley, vegetables, peas, and clover. Parts of Egypt have perennial irrigation, and these can produce two or three crops a year. Others are irrigated only in flood, or if they are below the level of the Nile flood they may carry water for some time, which water is then drained off and the ground tilled. There is an elaborate statement of the problems of cultivated and uncultivated land in the several regions of Egypt and the proportion of cultivated land that receives its water supply by each of the two systems mentioned above.

Sir William emphasizes the fact that aside from flood protection the great problem of Egypt is to secure a water supply sufficient to furnish irrigation water when the Nile is low. Otherwise there is insufficient room for the very rapidly growing population, which has doubled in the last forty years and is increasing at the rate of 200,000 a year. He emphasizes particularly the value of the Sudan region of the White Nile, hitherto unutilizable, a vast waste of marsh and water which receives the flood waters of the Lake Albert region and which if properly controlled by engineering works could be made to supply all the water needed for many years to come. He would utilize the fall of the Nile to generate electrical power for lifting water otherwise unavailable. Associated with this plan is that of changing the present wasteful "basin irrigation system" of upper Egypt, which involves the flooding of low-lying bodies in the Nile Valley, to "perennial irrigation" which requires the conservation of flood waters and the pumping of the river water into the irrigation canals. The peak of the annual flood would thus be taken off and Egypt freed from all danger of inundation.

A Montana County Geography

O. W. Freeman. **Geography and Geology of Fergus County.** 71 pp.; map, ills., bibliogr., index. *Fergus County High School Bull. 2*, Lewistown, Mont., 1919.

This small handbook, descriptive of a county in the center of Montana, has been prepared less for school use than in response to a demand for instruction on the part of the public. It is an excellent example of the manner in which an enterprising school may itself reach out to edify the adults of the community, and it therefore deserves grateful recognition.

The first bulletin of this series, published over ten years ago, described the "Birds of Fergus County"; a third is planned on the "History and Civics" of the county, for which we trust it may not be necessary to wait another decade, and in which we earnestly hope to see expression of a vigorous and whole-souled but not boastful American spirit, clearly stating our ideals and fairly setting forth our successes but not glossing over difficulties, dangers, and failures.

The chapters of the present bulletin give a good selection of information on the physical features and setting of the county, its towns and cities, geology and mineral resources, climate and ground water, soils and the relation of these features to agriculture and settlement.

The final chapter deals with the origin of local names. The text is embellished by several half-tone illustrations, one of which is an exceptionally fine two-page view showing foothills, bench land and bottom land, the locality of which is unfortunately omitted. The outline map of the county, supplied from the state capital, would be much improved if redrawn on a larger scale and reduced so that the lines and the lettering should be finer and clearer; the name of Musselshell River should be added along the eastern border. The bibliography at the beginning and the index at the end of the bulletin add much to its value.

Fergus County fully deserves not only three but a whole series of bulletins, for its area is almost as great as that of Massachusetts. It occupies the southwestern angle between the Missouri and Musselshell Rivers, and includes on its southwestern border parts of the Little Belt and Big Snowy Mountains of anticlinal structure, marginal members of the Rocky Mountain system. Near the county center the Judith and Moccasin mountains are residual masses maintained on igneous sheets and dikes in the higher members of the horizontal Plains strata; but the greatest part of the county lies in the Great Plains province. It offers an excellent field for geographical and geological exposition. As a general comment on the method of presentation employed, in so far as geography is concerned, it may be noted that the connection existing between various related facts is, by reason of their separate mention in different chapters, too often less explicitly brought out than is desirable as a means of introducing the "causal notion" into the popular conception of geography. For example, the second chapter on towns and cities is almost wholly empirical in its descriptions; again, the paragraphs on caves, which are described under "picturesque features" with a disproportionate amount of space given to ice caverns, do not sufficiently emphasize the control of their distribution by the tilted outcrops of the heavy mountain limestones. The penultimate chapter on geographical influences and consequences stands too far removed from the earlier accounts of physical features. The chapter on climate would be much improved if vivid explanatory descriptions of different types of weather were added to the text and tables in which the average values of climatic elements are presented.